

## ABSTRACT

The invention comprises a system for processing seismic data to estimate time shift resulting from velocity anisotropy in the earth's subsurface. A gather of seismic data traces is formed and selected seismic data traces included in said gather within selected time  
5 windows are cross-correlated to estimate the time shift in the seismic data traces included in said gather resulting from velocity anisotropy in the earth's subsurface.